

FCC/MELLON

AUG 03 1998

FCC TEST REPORT

for

PART 15, SUBPART B CLASS B

EQUIPMENT : VGA Card

MODEL NO. : VI02

F C C I D : I27MM-VI02A

FILING TYPE : CERTIFICATION

APPLICANT : BIOSTAR GROUP

2F, No. 108-2, Min Chuan Rd.,
Hsin Tien City, Taipei Hsien, Taiwan, R.O.C.

- The test result refers exclusively to the test presented test model / sample.
- Without the written authorization of the test lab., the Test Report may not be copied.

SPORTON INTERNATIONAL INC.

6F, No. 106, Hsin Tai Wu Rd., Sec. 1, Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

TABLE OF CONTENT

SECTION TITLE	PAGE
BIOSTAR GROUP	1
CERTIFICATE OF COMPLIANCE	4
BIOSTAR GROUP	4
1. GENERAL DESCRIPTION OF EQUIPMENT UNDER TEST	5
1.1. APPLICANT	5
BIOSTAR GROUP	5
1.2. MANUFACTURER :	5
1.3. BASIC DESCRIPTION OF EQUIPMENT UNDER TEST	5
1.4. FEATURE OF EQUIPMENT UNDER TEST	5
2. TEST CONFIGURATION OF EQUIPMENT UNDER TEST	6
2.1. TEST MANNER	6
2.2. DESCRIPTION OF TEST SYSTEM	8
2.3. CONNECTION DIAGRAM OF TEST SYSTEM	9
3. TEST SOFTWARE	10
4. GENERAL INFORMATION OF TEST	10
4.1. TEST FACILITY	10
4.2. STANDARD FOR METHODS OF MEASUREMENT	10
4.3. TEST IN COMPLIANCE WITH	10
4.4. FREQUENCY RANGE INVESTIGATED	10
4.5. TEST DISTANCE	11
5. TEST OF CONDUCTED POWERLINE	11
5.1. MAJOR MEASURING INSTRUMENTS	12
5.2. TEST PROCEDURES	13
5.3. TYPICAL TEST SETUP LAYOUT OF CONDUCTED POWERLINE	14
5.4. TEST RESULT OF AC POWERLINE CONDUCTED EMISSION	15
5.4.1. TEST RESULT OF AC POWERLINE CONDUCTED EMISSION	16
5.5. PHOTOGRAPHS OF CONDUCTED POWERLINE TEST CONFIGURATION	18
5.5.1. PHOTOGRAPHS OF CONDUCTED POWERLINE TEST CONFIGURATION	20
6. TEST OF RADIATED EMISSION	20
6.1. MAJOR MEASURING INSTRUMENTS	21
6.2. TEST PROCEDURES	22
6.3. TYPICAL TEST SETUP LAYOUT OF RADIATED EMISSION	23
6.4. TEST RESULT OF RADIATED EMISSION	23

FCC TEST REPORT

REPORT NO. : F852802

6.4.1. TEST RESULT OF RADIATED EMISSION.....	24
6.5. PHOTOGRAPHS OF RADIATED EMISSION TEST CONFIGURATION.....	25
6.5.1. PHOTOGRAPHS OF RADIATED EMISSION TEST CONFIGURATION.....	26
7. ANTENNA FACTOR AND CABLE LOSS	27
8 LIST OF MEASURING EQUIPMENT USED.....	28



CERTIFICATE OF COMPLIANCE

for

FCC PART 15, SUBPART B CLASS B

EQUIPMENT : VGA Card

MODEL NO. : VI02

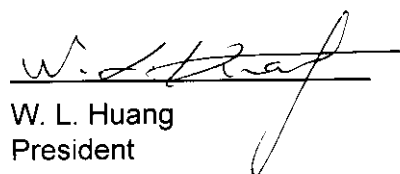
F C C I D : I27MM-VI02A

APPLICANT : **BIOSTAR GROUP**

2F, No. 108-2, Min Chuan Rd.,
Hsin Tien City, Taipei Hsien, Taiwan, R.O.C.

I **HEREBY** CERTIFY THAT :

The measurement shown in this report were made in accordance with the procedures given in **ANSI C63.4 -1992** and the energy emitted by this equipment was ***passed*** both radiated and conducted emissions **Class B** limits. Testing was carried out on **June 11, 1998** at **SPORTON International Inc. LAB.**


W. L. Huang
President

SPORTON INTERNATIONAL INC.

6F, No. 106, Hsin Tai Wu Rd., Sec. 1, Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

1. GENERAL DESCRIPTION OF EQUIPMENT UNDER TEST

1.1. APPLICANT

BIOSTAR GROUP

2F, No. 108-2, Min Chuan Rd.,

Hsin Tien City, Taipei Hsien, Taiwan, R.O.C.

1.2. MANUFACTURER :

Same as 1.1.

1.3. BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

EQUIPMENT : VGA Card

MODEL NO. : VI02

TRADE NAME : URION 740

DATA CABLE : Shielded

POWER SUPPLY TYPE : Switching

POWER CORD : Non-shielded

1.4. FEATURE OF EQUIPMENT UNDER TEST

- Graphics Engine : Intel740 Graphics and Video Accelerator
- Bus Type : 64-bit AGP 1.0 Interface
Support for AGP 2X Mode and Execute-Mode plus Sideband Addressing
- Memory Configuration : 2MB, 4MB or 8MB
- Connectors : Standard 15 pin VGA to monitor connector
TV output Connector
- Software and Driver : Windows 95, Windows 98, Windows NT 4.0 DirectX, and OpenGL
Xing Software MPEG Player

2. TEST CONFIGURATION OF EQUIPMENT UNDER TEST

2.1. TEST MANNER

- a. The EUT has been associated with personal computer and peripherals pursuant to ANSI C63.4-1992 and configuration operated in a manner which tended to maximize its emission characteristics in a typical application.
- b. The SONY monitor, HONEYWELL keyboard, GENIUS mouse, HP printer, ACEEX modem, SHARP television, and EUT were connected to the F.I.C. P.C. for EMI test.
- c. The following display resolution were investigated during the compliance test :
 - 1. Horizontal frequency (640×480 to 1600×1200, 31.5KHz to 94KHz)
 - 2. Vertical frequency (60Hz to 75Hz)
- d. According to the above tests, we listed the flowing display modes as the worst cases :
 - 1. 640×480 (31KHz), refresh rate 60Hz, TV mode.
 - 2. 1600×1200 (94KHz), refresh rate 75Hz.
- e. Frequency range investigated: Conduction 450 KHz to 30 MHz, Radiation 30 MHz to 2000 MHz.

2.2. DESCRIPTION OF TEST SYSTEM

Support Device 1. --- P.C. (F.I.C.)

FCC ID : N/A
odel No. : P2L97
Serial No. : SP1005
Data Cable : Shielded
Power Cord : Non-shielded
Power Supply Type : Switching

(Remark : This support device was tested to comply with FCC standards and
authorized under a declaration of conformity.)

Support Device 2. --- MONITOR (SONY)

FCC ID : AK8GDM17SE2T
Model No. : GDM-17SE2T
Serial No. : SP1006
Data Cable : Shielded, 360 degree via metal backshells, 1.75m
Power Supply Type : Switching
Power Cord : Non-shielded

FCC TEST REPORT**REPORT NO. : F852802**

Support Device 3. --- KEYBOARD (HONEYWELL)

FCC ID : GJK101RX-6
Model No. : PC7XL-AA
Serial No. : SP1038
Data Cable : Shielded, 132 cm Length, Metallic connector, 3.0m

Support Device 4. -- PS/2 MOUSE (GENIUS)

FCC ID : FSUGMZFC
Model No. : NETMOUSE
Serial No. : SP1034
Data Cable : Non-shielded, 1.75m

Support Device 5. --- PRINTER (HP)

FCC ID : DSI6XU2225
Model No. : 2225C
Serial No. : SP1015
Data Cable : Shielded, 360 degree via metal backshells, 135m
Power Supply Type : Linear

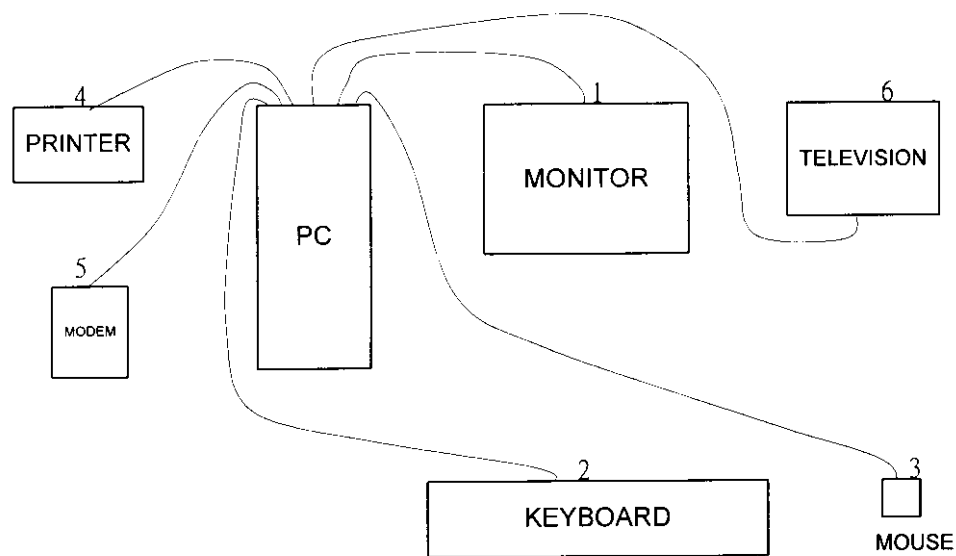
Support Device 6. -- MODEM (ACEEX)

FCC ID : IFAXDM1414
Model No. : DM1414
Power Supply Type : Linear, AC Adapter
Power Cord : Non-shielded
Serial No. : SP1019
Data Cable : Shielded, 1.75m

Support Device 7. --TELEVISION (SHARP)

Model No. : 511812
Serial No. : SP1055
AV-Video Data cable : Non-shielded

2.3. CONNECTION DIAGRAM OF TEST SYSTEM



1. The I/O cable is connected to the EUT.
2. The I/O cable is connected to the support device 3.
3. The I/O cable is connected to the support device 4.
4. The I/O cable is connected to the support device 5.
5. The I/O cable is connected to the support device 6.
6. The I/O cable is connected to the EUT.

3. TEST SOFTWARE

3.0 Using the following batch files to connect the EUT and workstation with twisted pair cable.

- a. For EUT : In WIN 98 mode, running the "WINFCC.EXE".
 - b. For workstation : In WIN 98 mode, running the batch file "WINFCC.EXE".
-
- a. Turn on the power of all equipment.
 - b. The PC transmits the " H " character to the EUT.
 - c. The monitor then displaying the " H " characters on the screen continuously and repeatly.
 - d. The PC sends " H " messages to the printer, then the printer prints it on the paper.
 - e. The PC sends " H " messages to the modem.
 - f. The PC sends " H " messages to the internal Hard Disk, then the hard disk reads and writes the message.
 - g. Repeat the steps from b to f.

4. GENERAL INFORMATION OF TEST

4.1. TEST FACILITY

This test was carried out by SPORTON INTERNATIONAL INC. in an openarea test site.

Openarea Test Site Location : No. 3, Lane 238, Kang Lo Street, Nei Hwu District,
Taipei 11424, Taiwan, R.O.C.

TEL : 886-2-2631-4739

FAX : 886-2-2631-9740

4.2. STANDARD FOR METHODS OF MEASUREMENT

ANSI C63.4-1992

4.3 .TEST IN COMPLIANCE WITH

FCC PART 15, SUBPART B CLASS B

4.4. FREQUENCY RANGE INVESTIGATED

- a. Conduction : from 450 KHz to 30 MHz
- b. Radiation : from 30 MHz to 2000 MHz.

4.5. TEST DISTANCE

The test distance of radiated emission from antenna to EUT is 3M.

5. TEST OF CONDUCTED POWERLINE

Conducted Emissions were measured from 450 KHz to 30 MHz with a bandwidth of 9 KHz on the 115 VAC power and return leads of the EUT according to the methods defined in ANSI C63.4-1992 Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in Figure 5-3. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

5.1. MAJOR MEASURING INSTRUMENTS

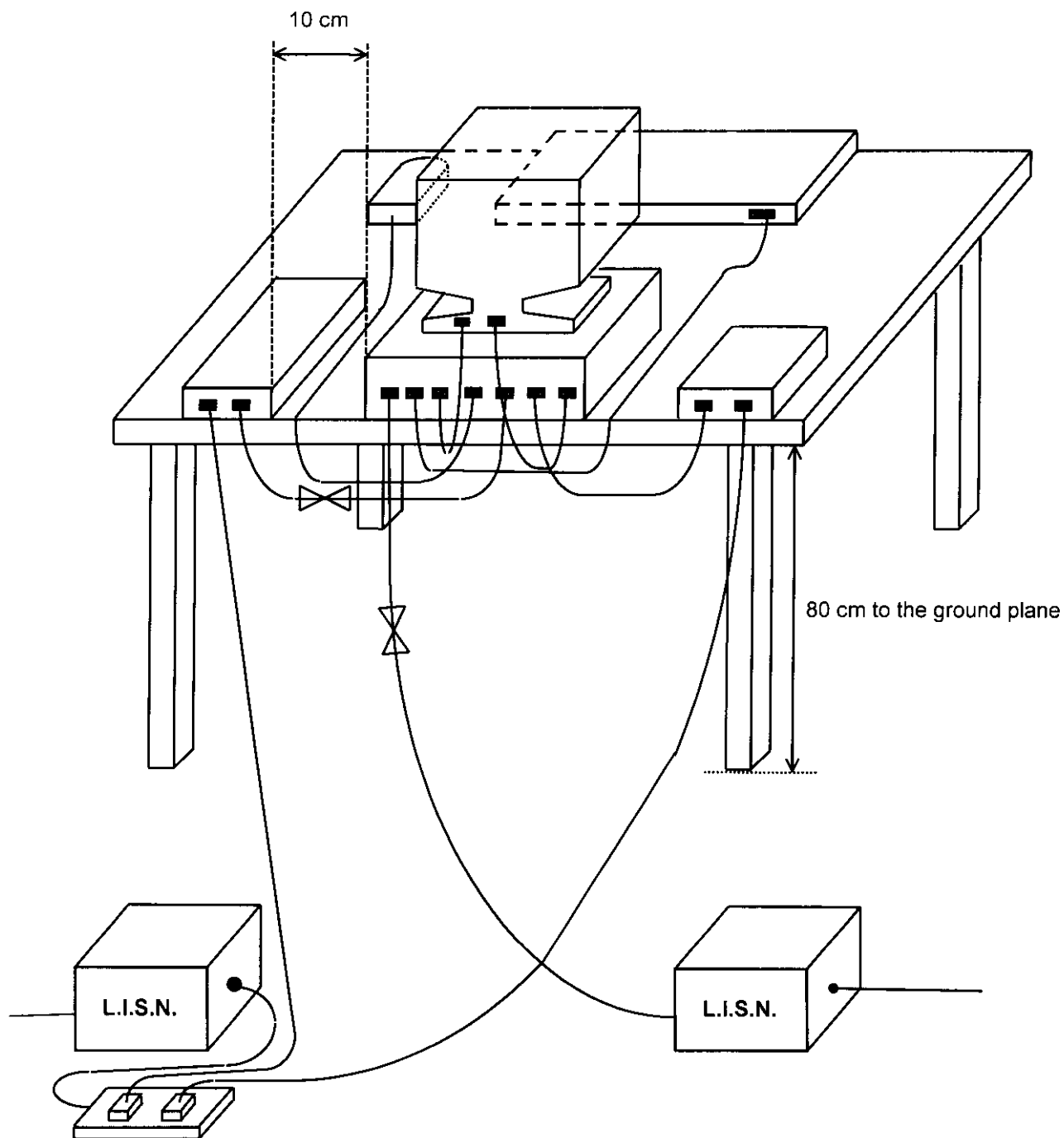
- Test Receiver

Attenuation	0 dB
Start Frequency	0.45 MHz
Stop Frequency	30 MHz
Step MHz	0.007 MHz
IF Bandwidth	9 KHz

5.2. TEST PROCEDURES

- a. The EUT was placed 0.4 meter from the conducting wall of the shielding room and was kept at least 80 centimeters from any other grounded conducting surface.
- b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- c. All the support units are connect to the other LISN.
- d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- e. The FCC states that a 50 ohm , 50 microhenry LISN should be used.
- f. Both sides of AC line were checked for maximum conducted interference.
- g. The frequency range from 450 KHz to 30 MHz was searched.
- h. Set the test-receiver system (HP receiver 85462A) to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- i. If the emission level of the EUT in peak mode was 6 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported otherwise the emissions which do not have 6 dB margin will be retested on by one using the quasi-peak method and reported.

5.3. TYPICAL TEST SETUP LAYOUT OF CONDUCTED POWERLINE



5.4. TEST RESULT OF AC POWERLINE CONDUCTED EMISSION

- Frequency Range of Test : from 0.45 MHz to 30 MHz
- All emissions not reported here are more than 10 dB below the prescribed limit.
- Temperature : 22°C
- Relative Humidity : 64 % RH
- Test Mode : TV mode (640×480 31K / 60Hz)
- Test Date : June 11, 1998

The Conducted Emission test was passed at Line 0.45 MHz/ 38.60 dBuV.

Frequency (MHz)	Line / Neutral	Meter Reading		Limits		Margin
		(dBuV)	(uV)	(dBuV)	(uV)	(dB)
0.45	L	38.60	85.11	48.00	251.19	-9.40
0.79	L	37.10	71.61	48.00	251.19	-10.90
17.87	L	33.80	48.98	48.00	251.19	-14.20
0.48	N	37.50	74.99	48.00	251.19	-10.50
0.91	N	36.30	65.31	48.00	251.19	-11.70
17.87	N	34.20	51.29	48.00	251.19	-13.80

Test Engineer : *Benson Tsai*

BENSON TSAI

5.4.1. TEST RESULT OF AC POWERLINE CONDUCTED EMISSION

- Frequency Range of Test : from 0.45 MHz to 30 MHz
- All emissions not reported here are more than 10 dB below the prescribed limit.
- Temperature : 22°C
- Relative Humidity : 64 % RH
- Test Mode : 1600×1200 94K 75Hz
- Test Date : June 11, 1998

The Conducted Emission test was passed at Neutral 0.48 MHz/ 40.50 dBuV.

Frequency (MHz)	Line / Neutral	Meter Reading		Limits		Margin
		(dBuV)	(uV)	(dBuV)	(uV)	(dB)
0.48	L	39.70	96.61	48.00	251.19	-8.30
0.79	L	38.60	85.11	48.00	251.19	-9.40
17.87	L	32.50	42.17	48.00	251.19	-15.50
0.48	N	40.50	105.93	48.00	251.19	-7.50
0.72	N	39.30	92.26	48.00	251.19	-8.70
17.87	N	33.60	47.86	48.00	251.19	-14.40

Test Engineer :

Benson Tsai
BENSON TSAI

6. TEST OF RADIATED EMISSION

Radiated emissions from 30 MHz to 2000 MHz were measured with a bandwidth of 120 KHz according to the methods defines in ANSI C63.4-1992. The EUT was placed on a nonmetallic stand in the open-field site, 0.8 meter above the ground plane, as shown in Figure 6-3. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions.

6.1. MAJOR MEASURING INSTRUMENTS

- RF Preselector

Attenuation	0 dB
RF Gain	20 dB
Signal Input	Input 2 (for 20 MHz to 2 GHz)

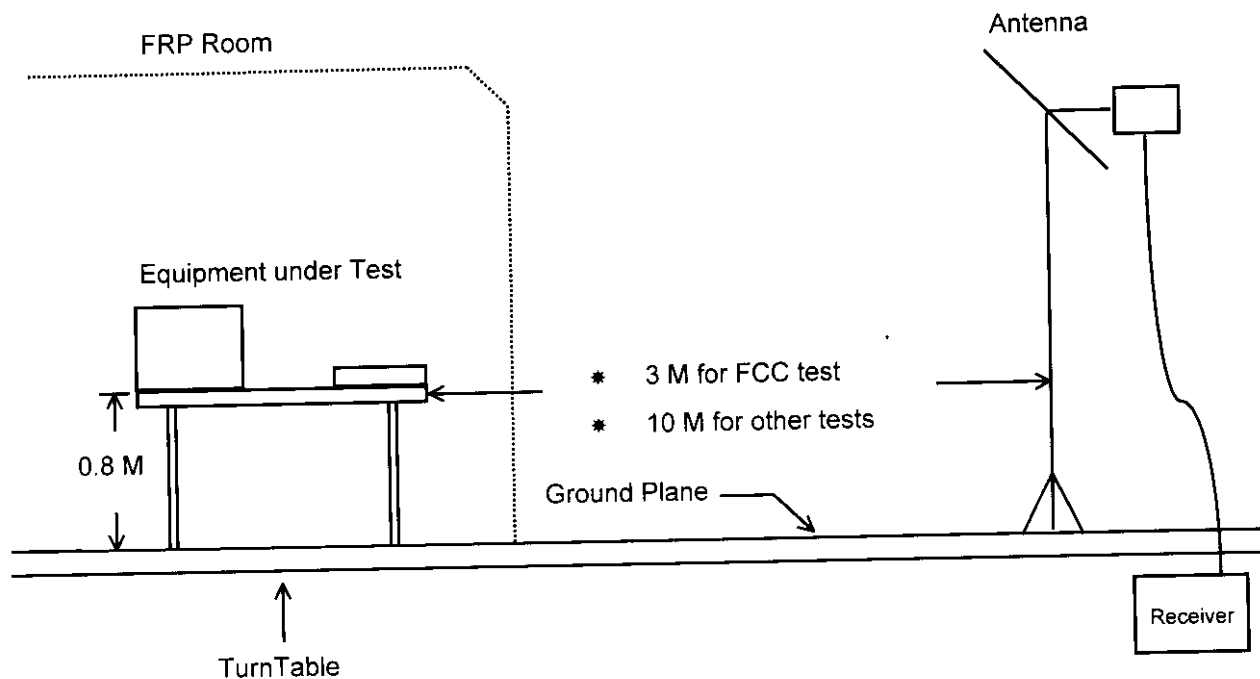
- Spectrum Analyzer

	8568B
Attenuation	0 dB
Start Frequency	30 MHz
Stop Frequency	2000 MHz
Resolution Bandwidth	1 MHz
Video Bandwidth	1 MHz
Signal Input	Input 1 (for 100 KHz to 1.5 GHz)

- Quasi-Peak Adapter

Resolution Bandwidth	120 KHz
Frequency Band	30 MHz to 2 GHz
Quasi-Peak Detector	ON for Quasi-Peak Mode
	OFF for Peak Mode

6.3. TYPICAL TEST SETUP LAYOUT OF RADIATED EMISSION



7. ANTENNA FACTOR AND CABLE LOSS

Frequency (MHz)	Antenna Factor (dB)	Cable Loss (dB)
30	-1.91	0.90
35	-0.50	0.92
40	0.61	1.04
45	1.40	1.28
50	2.39	1.10
55	3.54	1.11
60	4.40	1.30
65	4.84	1.40
70	5.59	1.37
75	6.21	1.24
80	7.60	1.51
85	7.73	1.60
90	8.22	1.60
95	8.90	1.70
100	9.36	1.70
110	10.01	1.70
120	10.41	1.90
130	10.84	1.90
140	11.42	1.91
150	11.91	2.01
160	12.25	2.11
170	12.72	2.21
180	13.02	2.30
190	13.50	2.30
200	14.05	2.40
220	15.11	2.50
240	16.81	2.60
260	17.51	2.71
280	17.70	2.90
300	17.89	2.91
320	18.00	3.10
340	18.33	3.20
360	19.44	3.30
380	20.31	3.40
400	21.19	3.50
450	21.10	3.70
500	22.21	4.10
550	23.42	4.30
600	24.01	4.50
650	25.11	4.70
700	26.00	4.90
750	26.41	5.11
800	27.10	5.50
850	27.51	5.60
900	27.90	5.80
950	28.01	5.90

8 LIST OF MEASURING EQUIPMENT USED

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Test Receiver	R&S	ESH3	893495/013	9 KHz - 30MHz	April 13, 1998	Conduction
Test Receiver	R&S	ESVP	893610/003	20MHz - 1.3 GHz	April 13, 1998	Conduction
LISN	EMCO	3825/2	9510-2484	50 ohm / 50 μ H	Nov. 29, 1997	Conduction
LISN	KYORITSU	KNW-407	8-1010-15	50 ohm / 50 μ H	Nov. 10, 1997	Conduction
EMI Filter	CORCOM	MRI-2030	N/A	480VAC / 30A	N/A	Conduction
Spectrum Monitor	R & S	EZM	894987/011	N/A	April 13, 1998	Conduction
Spectrum Analyzer (site 3)	ADVANTED	R3261C	71720471	9KHz - 2.6GHz	Dec. 04, 1997	Radiation
Amplifier (Site 3)	HP	8447D	2944A06292	0.1MHz - 1.3GHz	Nov. 19, 1997	Radiation
Bilog Antenna (3)	CHASE	CBL6112A	2218	30MHz - 2GHz	Feb. 07, 1998	Radiation
Half-wave dipole antenna (3)	EMCO	3121C	9705-1285	20MHz - 1GHz	May 19, 1998	Radiation
Turn Table	EMCO	1060-1.211	9507-1805	0 ~360 degree	N/A	Radiation
Antenna Mast	EMCO	1051-1.2	9502-1868	1 m - 4 m	N/A	Radiation



D7O0701

SPORTON LAB.

Certificate No:

CERTIFICATE OF COMPLIANCE

Authorized under Declaration of Conformity
according to

47 CFR, Part 2 and Part 15 of the FCC Rules

Equipment Under Test : PERSONAL COMPUTER

Model No. : P2L97

Applicant : FIRST INTERNATIONAL COMPUTER INC.

6F, Formosa Plastics Rear Building 201,
Tung Hwa N. Rd., Taipei, Taiwan, R.O.C.



CERTIFY THAT:

THE MEASUREMENTS SHOWN IN THIS TEST REPORT WERE MADE IN
ACCORDANCE WITH THE PROCEDURES GIVEN IN **ANSI C63.4 - 1992**
AND THE ENERGY EMITTED BY THIS EQUIPMENT WAS **PASSED** BOTH
RADIATED AND CONDUCTED EMISSIONS CLASS B LIMITS. THE TESTING
WAS COMPLETED ON **SEP. 02, 1997** AT **SPORTON INTERNATIONAL**
INC. LAB. IN NEI HWU.

W. L. Huang OCT 02, 97

W. L. Huang
GENERAL MANAGER

EXHIBIT C